

Appl. No. 09/960,078
Amdt. Dated 11/28/2004
Reply to Office action of 10/05/200

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (canceled)
2. (currently amended) The method of claim [[4]] 6, further comprising the step of:
positioning the three or more work stations to be aligned to and spaced along a common,
linear working axis.
3. (canceled)
4. (canceled)
5. (canceled)
6. (currently amended) A method for aligning three or more tire building drums moving
through three or more work stations of an automated tire building system, the method comprising
the steps of:
_____ independently moving each tire building drum through the three or more work stations so
that an axis of revolution of each tire building drum is coincident with a working axis extending
through the three or more work stations;
_____ providing a rail system of two approximately parallel rails extending parallel to the
working axis through the three or more work stations;
_____ causing each tire building drum to ride on the rail system through the three or more work
stations;
_____ using both of the approximately parallel rails for supporting and vertically aligning each
tire building drum as it rides through the three or more work stations;
_____ using only one of the approximately parallel rails for laterally aligning each tire building
drum as it rides through the three or more work stations;
_____ providing a substantially flat top on a first rail of the two approximately parallel rails;
_____ providing a substantially inverted V-shaped top on a second rail of the two approximately
parallel rails; The method of claim 5, further comprising the steps of:
_____ providing at least one flat roller attached to each tire building drum to ride on the first

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rail; and

providing at least two pairs of V-mounted rollers attached to each tire building drum to ride on the second rail.

7. (currently amended) The method of claim [[4]] 6, further comprising the steps of:
independently moving each tire building drum with a self-propelled vehicle traveling along the rail system; and

flexibly attaching each tire building drum to a one of the vehicles.

8. (previously presented) A method for aligning three or more tire building drums moving through three or more work stations of an automated tire building system, the method comprising the step of:

independently moving each tire building drum through the three or more work stations so that an axis of revolution of each tire building drum is coincident with a working axis extending through the three or more work stations;

further comprising the steps of:

providing a rail system of two approximately parallel rails extending parallel to the working axis through the three or more work stations; and

causing each tire building drum to ride on the rail system through the three or more work stations;

further comprising the steps of:

independently moving each tire building drum with a self-propelled vehicle traveling along the rail system; and

flexibly attaching each tire building drum to a one of the vehicles;

further comprising the steps of:

resting the tire building drum on the vehicle for moving the tire building drum to and from the rail system;

providing entry ramps on the rail system for raising the tire building drum off of the vehicle in order to ride on the rail system through the three or more work stations; and

providing exit ramps on the rail system for lowering the tire building drum in order to rest on the vehicle instead of riding on the rail system while not moving through the three or more work stations.

9. (original) The method of claim 8, further comprising the step of:

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laterally funneling the tire building drum into the rail system at the entry ramps.

10. (original) The method of claim 8, further comprising the step of:

providing flat rollers attached to the tire building drum to ride up the entry ramps and to ride down the exit ramps.

11. (canceled)

12. (canceled)

13. (canceled)

14. (canceled)

15. (canceled)

16. (canceled)

17. (canceled)

18. (canceled)

19. (canceled)

20. (canceled)

21. (previously presented) The method of claim 8, further comprising the step of:

positioning the three or more work stations to be aligned to and spaced along a common, linear working axis.

22. (previously presented) The method of claim 8, further comprising the steps of:

using both of the approximately parallel rails for supporting and vertically aligning each tire building drum as it rides through the three or more work stations; and

using one of the approximately parallel rails for laterally aligning each tire building drum as it rides through the three or more work stations.

23. (previously presented) The method of claim 22, further comprising the steps of:

providing a substantially flat top on a first rail of the two approximately parallel rails; and

providing a substantially inverted V-shaped top on a second rail of the two approximately parallel rails.

24. (previously presented) The method of claim 23, further comprising the steps of:

providing at least one flat roller attached to each tire building drum to ride on the first rail; and

providing at least two pairs of V-mounted rollers attached to each tire building drum to ride on the second rail.

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25. (currently amended) A method for aligning a plurality of tire building drums with a plurality of work stations of an automated tire building system, comprising the steps of:
~~independently moving each tire building drum with a self propelled vehicle traveling on a rail system having two parallel rails to the plurality of work stations;~~
causing each tire building drum to ride through the plurality of work stations on a rail system having two approximately parallel rails laid on a floor;
independently moving each tire building drum with a self-propelled vehicle riding on wheels upon the floor and traveling along the rail system;
flexibly attaching each tire building drum to a one of the vehicles;
resting the tire building drum on the vehicle for moving the tire building drum to and from the rail system;
supporting and vertically aligning each tire building drum with at least one of the approximately parallel rails at each of the work stations; and
laterally aligning each tire building drum with only one of the approximately parallel rails at each of the work stations.

26. (previously presented) Method, according to claim 25, wherein:
an axis of revolution of each tire building drum is coincident with a working axis extending through the plurality of work stations.

27. (previously presented) Method, according to claim 25, wherein:
assuring that each point along an entire drum length of the tire building drum axis of revolution is within a specified precision distance of the work station working axis.

28. (previously presented) Method, according to claim 27, wherein:
assuring the precision distance by making the tire building drum axis of revolution coincident with the work station working axis.

29. (previously presented) Method, according to claim 25, further comprising:
precisely registering a longitudinal position of the tire building drum relative to each work station.

30. (previously presented) A method for aligning a plurality of tire building drums with a plurality of work stations of an automated tire building system, comprising:
independently moving each tire building drum with a self-propelled vehicle traveling on a rail system having two parallel rails to the plurality of work stations;

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supporting and vertically aligning each tire building drum with at least one of the parallel rails at each of the work stations; and

laterally aligning each tire building drum with only one of the parallel rails at each of the work stations; and

further comprising:

providing entry ramps on the rail system for raising the tire building drum off of the vehicle in order to ride on the rail system through the plurality of work stations; and

providing exit ramps on the rail system for lowering the tire building drum in order to rest on the vehicle instead of riding on the rail system while not moving through the plurality of work stations.

31. (previously presented) The method of claim 30, further comprising the step of:
laterally funneling the tire building drum into the rail system at the entry ramps.

32. (previously presented) The method of claim 30, further comprising the step of:
providing flat rollers attached to the tire building drum to ride up the entry ramps and to ride down the exit ramps.